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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/589,281

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Katsuhiro Makihata

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MCDERMOTT WILL & EMERY LLP
600 13TH STREET, NW
WASHINGTON, DC 20005-3096

EXAMINER

ELBIN, JESSE A

ART UNIT

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/589,281	Applicant(s) MAKIHATA ET AL.	
	Examiner JESSE A. ELBIN	Art Unit 2614	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 December 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-12 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 December 2008 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 1-2 and 7-8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US PGPub 2006/0280320 ('320)) (already of record) in view of Applicant's admitted prior art.

Regarding claim 1, Song teaches an electret condenser microphone ('320 title) comprising: a vibrating diaphragm ('320 #206) in which one face is electrically conductive ("the electret formed on the diaphragm 206 is called a front electret"; '320

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[0021] lines 7-8); a fixed electrode (back-plate; '320 #210) which is placed to be opposed to said vibrating diaphragm ("facing each other"; '320 [0020] lines 6-7 and Fig. 2) via an air layer (*air layer created by spacer '320 #208*); a dielectric layer which becomes an electret for storing charges in one of said vibrating diaphragm and said fixed electrode ("either the diaphragm 206 or the back-plate 210 is formed with an electret"; '320 [0021] lines 6-7); circuit means (PCB; '320 #216) for converting an electrostatic capacity between said vibrating diaphragm and said fixed electrode to an electric signal ("a field effect transistor (FET), an embedded gain amplifier or the like...mounted on the PCB 216"; '320 [0023] lines 6-7); external connecting means (connecting terminal '320 #220) for leading out the electric signal; and a first spacer ('320 #208) which forms and holds a predetermined positional relationship between said vibrating diaphragm and said fixed electrode ('320 Fig. 2 #208).

Song does not explicitly teach said microphone being incorporated in a metallic case while exposing only said external connecting means, wherein an outer face of said case is coated by a nonmetallic material in which a deforming temperature is higher than a charge dissipating temperature of said dielectric layer that becomes said electret.

Song does teach that a "conventional electret condenser microphone includes a case 102 made of a cylindrical metal" ('320 [0004] lines 1-3). Further, '320 Fig. 2 illustrates the case enclosing all components, except the connecting terminal. A metallic case can be used as a signal path to reduce components needed, reducing the space required.

It would have been obvious to one of ordinary skill in the art at the time of the invention to use a metallic case in the electret condenser microphone as taught by Song to reduce the components, and space required for the device.

Song further teaches materials, such as PEEK, PEN, and PES ('320 [0022] line 17) are each examples of "a high-temperature resistant material is used for components of the electret condenser microphone, so that the electret condenser microphone capable of surface mounting can be produced" ('320 [0022] lines 5-8).

Applicant admits PEEK, PEN, and PPS all have higher melting points (deforming temperature; page 14, table 1) than the temperature, at which, the surface potential is reduced by about 20% (charge dissipating temperature; page 4, lines 8-10).

While neither Song, nor Applicant explicitly teaches coating the outer face of the case with a nonmetallic material, it would have been obvious to one of ordinary skill in the art at the time of the invention to use one of the high-temperature resistant materials taught by Song as the outermost surface of the case to increase the thermal resistance of the device, while maintaining a metallic contact between the diaphragm and the circuit below (i.e. coating the metallic case with a high-thermal resistance material) for the benefit of producing an electret microphone capable of surface mounting.

Regarding claim 2, Song and Applicant's admitted prior art remain as applied above.

See rejection of claim 1 above, where Song teaches said nonmetallic material which coats said case is one of polyimide, a liquid crystal polymer, polyetherimide (PEI),

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polyetheretherketone (PEEK), polyethernitrile (PEN), and polyphenylene sulfide (PPS), or a composite material containing one of the materials ("high-temperature resistant material...is exemplified by...PEEK, PEN, [and] PES"; '320 [0022] lines 15-17).

Regarding claim 7, Song and Applicant's admitted prior art remain as applied above.

See rejection of claim 1 above, where Song teaches a material of said first spacer is one of polyimide, a liquid crystal polymer, polyetherimide (PEI), polyetheretherketone (PEEK), polyethernitrile (PEN), and polyphenylene sulfide (PPS), or a composite material containing one of the materials ("high-temperature resistant material...is exemplified by...PEEK, PEN, [and] PES"; '320 [0022] lines 15-17).

Regarding claim 8, Song and Applicant's admitted prior art remain as applied above.

Song further teaches a second spacer (Fig. 2 #214) which forms a space between said fixed electrode and said circuit means (Fig. 2).

4. Claims 3-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US PGPub 2006/0280320 ('320)) (already of record) in view of Applicant's admitted prior art as applied to claim 1 above, and further in view of Cho et al. (US PGPub 2003/0113546 '546)) (already of record).

Regarding claim 3, Song and Applicant's admitted prior art remain as applied above.

In the same field of endeavor, Cho teaches said dielectric layer containing polytetrafluoroethylene (PTFE) (a multi-layer electret constructed of "a poly-tetrafluoro-ethylene...PTFE... film" ('546 [0020]) for the benefit of creating an electret with ultra-high charge stability (abstract).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use the PTFE-including electret taught by Cho in the electret condenser microphone as taught by the combination of Song and Applicant's admitted prior art for the benefit of having ultra-high charge stability.

Regarding claim 4, Song, Applicant's admitted prior art, and Cho remain as applied above.

Cho further teaches a film thickness of the polytetrafluoroethylene (PTFE) is equal to or larger than three times of a particle diameter of the PTFE (the PTFE "film 20 having high crystallinity of 30-100 μm thickness"; '546 [0020] lines 5-6), wherein "the [PTFE] resin is a mass of microscopic grains each of which has the size of 10-20 μm " ('546 [0022] lines 10-11).

5. Claims 5-6 and 11-12 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US PGPub 2006/0280320 ('320)) (already of record) in view of

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Applicant's admitted prior art as applied to claim 1 above, and further in view of Yagi et al. (US Patent 3,946,422 ('422)) (already of record).

Regarding claim 5, Song and Applicant's admitted prior art remain as applied above.

In the same field of endeavor, Yagi teaches a microphone having a structure in which a dielectric layer is a silicon dioxide film ('422 Figs. 4-6 #27 and col. 3 lines 59-60), and said silicon dioxide film is thoroughly coated by an insulator other than a silicon oxide film (a "combination of two layers...consists of silicon nitride and silicon dioxide"; col. 4 lines 25-28) to prevent said silicon dioxide film from being exposed to an atmosphere (for the benefit of achieving a higher charge in a shorter time than a silicon dioxide layer alone; '422 col. 4 lines 22-25).

It would have been obvious to one of ordinary skill in the art at the time of the invention to use an electret formed of a silicon dioxide layer, coated with silicon nitride as taught by Yagi in the electret condenser microphone taught by the combination of Song and Applicant's admitted prior art for the benefit of reducing the charging voltage and charging time of the electret.

Regarding claim 6, Song, Applicant's admitted prior art and Yagi remain as applied above.

Examiner takes official notice that forming a silicon dioxide film by a plasma CVD, or low-pressure CVD method is well known in the art. Forming films of silicon

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dioxide is required for production of semiconductor integrated circuits. Various methods of 'growing' silicon dioxide layers have been used, including plasma CVD and low-pressure CVD, all of which result in a film of silicon dioxide being formed on a layer of material. Further, Yagi teaches "vapor depositing a layer of...silicon dioxide" ('422 col. 4 lines 14-15) to create a precise layer thickness.

Regarding claim 11, See rejection of claim 5 above.

Regarding claim 12, See rejection of claim 6 above.

6. Claims 9 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Song et al. (US PGPub 2006/0280320 ('320)) (already of record) in view of Applicant's admitted prior art as applied to claim 8 above, and further in view of van Halteren et al. (US PGPub 2003/0076970 ("970)) (already of record).

Regarding claim 9, Song and Applicant's admitted prior art remains as applied above.

Neither Song nor Applicant's admitted prior art explicitly teaches the second spacer being made of the specific materials claimed.

Song explicitly teaches spacer (#214) being "constituted of a conductor" ([0021] lines 5-6) for the benefit making an electrical contact between the electrode and circuit board, rather than being one of the specific materials listed.

In the same field of endeavor, van Halteren teaches a different form of a conductor (e.g. Fig. 1 #34) for making contact between an electrode and circuit board, wherein spacing between the electrode (backplate; '970 Fig. 1 #28) and circuit means (Fig. 1 #36) is maintained by the shape of the case (Fig. 1 #12). This use of an electrical conductor, separate from the spacer allows for better thermal isolation of the condenser unit.

As several options are available for both electrical connection/isolation of the electrode with the circuit board, based on the requirements of the design, it would have been obvious to one of ordinary skill in the art at the time of the invention to modify the spacer taught by Song ('320 Fig. 2 #214) by making it out of the specific materials taught by Song in relation to the first spacer ('320 Fig. 2 #208; also see rejection of claim 7 above), and including a separate electrical conductor, as taught by van Halteren, for the benefit of further thermally isolating the condenser unit from heat transfer.

Regarding claim 10, Song and Applicant's admitted prior art remains as applied above.

See rejections of claims 7 and 9 above, wherein the combination of Song, Applicant's admitted prior art and van Halteren teaches use of the specifically claimed materials as the material used for both the first and second spacers.

Double Patenting

7. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the “right to exclude” granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

8. Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1, 4-7, and 10-12 of U.S. Patent No. 6,512,833 in view of Song et al. (US PGPub 2006/0280320 ('320)) in view of Applicant's admitted prior art as applied to claims 1, 2, and 7 above; alternately in view of Song in view of Applicant's admitted prior art in view of Cho et al. (US PGPub 2003/0113546 '546)) as applied to claims 3-4 above; alternately in view of Song in view of Applicant's admitted prior art in view of Yagi et al. (US Patent 3,946,422 ('422)) as applied to claims 5-6 above. While the claim language between the instant application and the issued patent is not identical, the differences were not found to patentably distinguish the instant application from the issued patent in view of the prior art applied above.

9. Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1-5, and 8 of U.S. Patent No. 6,731,766 in view of Song et al. (US PGPub 2006/0280320 ('320)) in view of Applicant's admitted prior art as applied to claims 1, 2, and 7 above; alternately in view of Song in view of Applicant's admitted prior art in view of Cho et al. (US PGPub 2003/0113546 '546)) as applied to claims 3-4 above; alternately in view of Song in view of Applicant's admitted prior art in view of Yagi et al. (US Patent 3,946,422 ('422)) as applied to claims 5-6 above. While the claim language between the instant application and the issued patent is not identical, the differences were not found to patentably distinguish the instant application from the issued patent in view of the prior art applied above.

10. Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1, 2, 7, 12-15, 18, 19, and 21 of U.S. Patent No. 6,999,596 in view of Song et al. (US PGPub 2006/0280320 ('320)) in view of Applicant's admitted prior art as applied to claims 1, 2, and 7 above; alternately in view of Song in view of Applicant's admitted prior art in view of Cho et al. (US PGPub 2003/0113546 '546)) as applied to claims 3-4 above; alternately in view of Song in view of Applicant's admitted prior art in view of Yagi et al. (US Patent 3,946,422 ('422)) as applied to claims 5-6 above. While the claim language between the instant application and the issued patent is not identical, the differences were not found to patentably distinguish the instant application from the issued patent in view of the prior art applied above.

11. Claims 1-7 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 1-8, and 14-21 of U.S. Patent No. 7,031,480 in view of Song et al. (US PGPub 2006/0280320 ('320)) in view of Applicant's admitted prior art as applied to claims 1, 2, and 7 above; alternately in view of Song in view of Applicant's admitted prior art in view of Cho et al. (US PGPub 2003/0113546 '546)) as applied to claims 3-4 above; alternately in view of Song in view of Applicant's admitted prior art in view of Yagi et al. (US Patent 3,946,422 ('422)) as applied to claims 5-6 above. While the claim language between the instant application and the issued

patent is not identical, the differences were not found to patentably distinguish the instant application from the issued patent in view of the prior art applied above.

12. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 18, 19, 21, 22, 24, and 28-30 of copending Application No. 10/576,518 (US PGPub 2007/0029894) in view of Song et al. (US PGPub 2006/0280320 ('320)) in view of Applicant's admitted prior art as applied to claims 1, 2, and 7 above; alternately in view of Song in view of Applicant's admitted prior art in view of Cho et al. (US PGPub 2003/0113546 '546)) as applied to claims 3-4 above; alternately in view of Song in view of Applicant's admitted prior art in view of Yagi et al. (US Patent 3,946,422 ('422)) as applied to claims 5-6 above. While the claim language between the two applications is not identical, the differences were not found to patentably distinguish the two applications in view of the prior art applied above.

This is a provisional obviousness-type double patenting rejection.

13. Claims 1-7 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over at least claims 4 and 6 of copending Application No. 11/661,355 (US PGPub 2008/0105935) in view of Song et al. (US PGPub 2006/0280320 ('320)) in view of Applicant's admitted prior art as applied to claims 1, 2, and 7 above; alternately in view of Song in view of Applicant's admitted prior art in view of Cho et al. (US PGPub 2003/0113546 '546)) as applied to claims 3-4

above; alternately in view of Song in view of Applicant's admitted prior art in view of Yagi et al. (US Patent 3,946,422 ('422)) as applied to claims 5-6 above. While the claim language between the two applications is not identical, the differences were not found to patentably distinguish the two applications in view of the prior art applied above.

This is a provisional obviousness-type double patenting rejection.

Response to Arguments

14. Applicant's arguments filed December 12, 2008 have been fully considered but they are not persuasive.

a. Applicant argues, with respect to the end of claim 1, that "the Examiner merely concludes that such a feature would have been obvious without any prior art support for his position" (page 9, lines 2-3). Examiner respectfully disagrees that examiner's conclusion of obviousness is based upon improper hindsight reasoning. It must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning, so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971).

b. While Examiner agrees, that neither Song ('320), nor Applicant's admitted prior art explicitly teaches "an outer face of said case [being] coated by a nonmetallic material in which a deforming temperature is higher than a charge

dissipating temperature of said dielectric layer that becomes said electret.”

Examiner maintains, and further elaborates, that several “nonmetallic material[s] in which a deforming temperature is higher than a charge dissipating temperature of said dielectric layer” is explicitly (or inherently) taught by Song ([0022] end).

Further, Song teaches use of these materials for the same purpose as Applicant (“the conventional electret condenser microphone has a problem in that it is difficult to employ surface mounting technique, because...even though they are of a high-temperature resistant material, the electret has a charge value changed at a high temperature, thus having a reduced sensitivity.” (‘320 [0005] lines 1-8).

Further Song teaches an additional problem with a conventional electret condenser microphone: “According to SMT, surface mounted components are exposed to a high temperature during a reflow process. For this reason, it is not suitable to apply the SMT to temperature sensitive components” (‘320 [0005] lines 13-16). As a solution to the problem, Song proposes “to provide an electret condenser microphone capable of surface mounting by a structure enclosing an electret with a base having an insulating characteristic so as not to allow deterioration of properties of the electret at high temperatures” (‘320 [0006] lines 3-7).

c. It is clear, from Song, that insulating an electret from high temperatures, to prevent a “sensitivity decrease of the microphone caused by a decrease of an electric potential value of the electret during a reflow process for surface mounting” (‘320 [0005] lines 9-12) is known in the art. Song teaches the same

materials proposed in the claims and specification of Applicant, which inherently have “a deforming temperature [that] is higher than a charge dissipating temperature”.

d. Therefore, the only limitation of claim 1 not explicitly taught by Song or Applicant’s admitted prior art, concerns “an outer face of said case [being] coated”. Song, instead, teaches containing the temperature sensitive components within a cylinder of “nonmetallic material in which a deforming temperature...” (‘320 Fig. 2 #212; “a first base 212 made from an insulating material having a good high-temperature resistance” [0020]). Examiner maintains that modifying Song to, instead, coat an outer surface of said case, would be obvious to one of ordinary skill in the art, at the time of the invention. Teflon (i.e. PTFE) coating of materials is very well known (and taught in Cho ‘546, currently applied to claims 3-4) and is an optional method of insulating, based on the specific requirements of the design. The specific implementation of Song (Fig. 2) shows the insulating base (#212) taking up volume within the case (#202). Coating the outside of the case with the same material would allow the inside of the case to remain the same, without reducing the temperature insulating properties of the design. There are numerous obvious benefits one of ordinary skill in the art could rely upon as motivation to modify Song that would result in the invention as claimed by Applicant, without deviating from Song’s design intent. Coating the outside of the case does not appear to produce any new or unexpected result or benefit over the inner insulation taught by Song.

Therefore, using the same material to insulate “an outer face of said case” would have been obvious to one of ordinary skill in the art at the time of the invention, based on Song’s teaching of insulating an inner portion of the case, for the benefits taught by Song.

Conclusion

15. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

16. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to JESSE A. ELBIN whose telephone number is (571)270-

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3710. The examiner can normally be reached on Monday through Friday, 9:00am to 6:00pm EDT.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Curtis Kuntz can be reached on (571) 272-7499. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/J. A. E./

Examiner, Art Unit 2614

/CURTIS KUNTZ/

Supervisory Patent Examiner, Art Unit 2614